

Remarks

The Office Action dated September 28, 2005, objected to the title, rejected claims 25-27 as being anticipated by U.S. Patent No. 5,185,689 to Maniar, rejected claims 25-28 as being anticipated by U.S. Patent No. 5,566,045 to Summerfelt et al., and rejected claims 25-28 as being anticipated by U.S. Patent No. 5,554,564 to Nishioka et al.

In response, applicants have amended independent claim 25 and added new claims 29-35. Claims 25-35 are pending for consideration.

Applicants respectfully traverse the stated rejections.

More particularly, the third layer of the lower electrode disclosed in Maniar and Nishioka is not formed over the top and side surfaces of the second layer (RuO_2) and the side surfaces of the first layer (TiN). As a result, if the dielectric layer were formed over the top and side surfaces of a lower electrode, as suggested by Maniar and Nishioka, the second layer (RuO_2) and/or the first layer (TiN) might come into contact with the dielectric layer, thereby causing leakage current between the second layer (RuO_2) and the dielectric layer, or between the first layer (TiN) and the dielectric layer. Thus, neither of the devices illustrated by Maniar and Nishioka et al. anticipates the claimed invention.

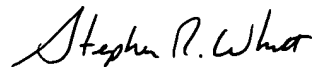
Additionally, in Summerfelt, the first layer (TiN) of the lower electrode is in the form of a plug. In contrast, amended claim 25 recites a first layer having a "the form of a plate." Of note, formation of the plug-shaped first layer in Summerfelt requires an additional planarization (e.g., an etch back or CMP process). The invention recited in amended claim 25 does not require this additional step. Thus, the device illustrated in Summerfelt et al. does not anticipate the claimed invention.

Further, the art of record does not render the claimed invention obvious. For example, even if one assumes that the first layer (TiN) of Summerfelt were modified to have plate-shape like Maniar or Nishioka et al., the third layer (Pt) would still not be suggested or disclosed by the art of record as being formed over the side surfaces of the first layer (TiN). Thus, leakage current between the first layer (TiN) and the dielectric layer would still be a possible problem.

In conclusion, Maniar, Summerfelt and Nishioka do not disclose a lower electrode having a first layer in the form of a plate or formed over the conductive plug and a third layer formed over top and side surfaces of the second layer and side surfaces of the first layer. As such amended claim 25 and its dependencies 26-29 are allowable over the art of record.

New claims 30-35 are similarly allowable over the art of record.

Respectfully submitted,
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